11748

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

July 16, 1999 (SR-6J)

Mr. D. Michael Light
Manager, Remedial Projects
Solutia, Inc.
10300 Olive Boulevard
P.O. Box 66760
St. Louis, Missouri 63166-6760

RE: Comments on June 25, 1999, Revised Support Sampling Plan
Sauget Area 1 Site, Sauget and Cahokia, Illinois

Dear Mr. Light:

The U.S. Environmental Protection Agency (U.S. EPA) has reviewed Solutia's June 25, 1999, revised Support Sampling Plan for the Sauget Area 1 Site. While this version of the revised Sampling Plan does address most of U.S. EPA's earlier comments, it still appears that Solutia is either unable or unwilling to address all of U.S. EPA's comments. Therefore the Sampling Plan is still not approvable. Those comments from U.S. EPA, including those from the U.S. Army Corps of Engineers, which still need to be addressed are attached to this letter. To expedite the approval process, U.S. EPA is requesting a meeting with Solutia and its consultants to go over each of the outstanding comments attached to determine why they have not been addressed and whether Solutia will address them. If, following the meeting, U.S. EPA believes Solutia will, in good faith, address the comments per our discussions at the meeting, U.S. EPA will allow Solutia adequate time to correct the Sampling Plan and then re-submit a final plan for U.S. EPA review and approval. A meeting to discuss the Agency's comments is tentatively scheduled for July 27, 1999, at a location to be determined.

If you have any immediate questions regarding the attached comments, please call me at 312/886-4663.

Sincerely,

Michael McAteer
Remedial Project Manager

Attachment

F: sqfl_553

cc: Thomas Martin, USEPA
Candy Morin, Illinois EPA
Tim Gouger, USACE
Kevin de la Bruere, USFWS
Michael Henry, Illinois DNR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

COMMENTS ON JUNE 25, 1999, REVISED SUPPORT SAMPLING PLAN
SAUGET AREA 1 SITE

VOLUME 1A:

- **1. Pages 106 and 107, Section 16.0 Schedule:** The timelines, as presented in Solutia's current draft Support Sampling Plan, are inexplicably longer than U.S. EPA believes is realistic (i.e., why would it require approximately 6 months to collect the soil samples from the developed/undeveloped areas?). Our meeting scheduled for July 27, 1999, will need to focus on the details of Solutia's schedule in comparison to the detailed scheduled provided by the Army Corps of Engineers (please see U.S. EPA's May 29, 1999, comments). The goal will be to come to agreement on a schedule that both the U.S. EPA and Solutia believes is realistic.

VOLUME 1B:

2. Page 2-3, Figure 2-1: *Original comment:* There is a potential exposure pathway for the recreational fisher to come into contact with contaminated surface water and sediments. Please revise the Conceptual Site model and Section 5.3.5. *A revised Figure 2-1 appears to be missing from U.S. EPA's copy of the revised Human Health Risk Assessment Work Plan.*

provided at 7/27/99 mtg

- **3. Page 5-1, Section 5.1:** *Original comment:* In the second paragraph under Section 5.1 consideration should be given to potential residential use near Sites M and N. *This comment does not appear to have been addressed. Why?*

N is changed M will be " on Table 5-1

VOLUME 1D:

- **4. Page 3, Section 1.1:** *Original comment*: There is a general theme running throughout Volume 1D that appears to be moving the non-time critical removal process into what would more likely be described as a time-critical or emergency removal action. Please note, this will not be acceptable at the Sauget Area 1 Site. Nothing in U.S. EPA's Administrative Order and Scope of Work suggests that a non-time critical removal action for this Site will not comprehensively address all threats. The opposite is in fact true here. Further, nothing in the Administrative Order and Scope of Work suggests that only "short-term" and "acute" threats to human health and the environment will be addressed (Section 3.1 and 4.1). It is critical that Solutia understand that the EE/CA process and the subsequent non-time critical removal action will be completed to address *all* threats to human health and the environment. This has almost always been the case with non-time critical removals at U.S. EPA-Region 5. U.S. EPA will not approve the Support Sampling Plan until this section of the plan is revised accordingly.

In accordance with the comment above, please replace all references to technologies and treatment processes which have been selectively removed (as originally printed in the AOC/SOW) by Solutia in Section 4.0.

may will change based on my call to Bruce on specifics I have line-by-line

Also, in Table 1, under the Effectiveness category, it is important to note that the selected removal action for Sauget Area 1 will be the final remedy for the Site. U.S. EPA is not planning to conduct any future "long-term solution" beyond the non-time critical removal and the remedial action for groundwater. Also, under the Implementability category, it should be noted that it is not expected, nor required, that a non-time critical removal be completed within one year.

Other than one sentence added to page 3 of Section 1.1, all of the above comments appear to have been ignored by Solutia. Why?

5. Page 14, Section 4.1.2: *Original comment*: The language used in the SOW should be included here. *This comment appears to have been ignored by Solutia. Why?* "

6. Page 15, Section 4.1.4: *Original comment*: The language included in the final paragraph under this section must be deleted. As stated above, the removal action planned for Sauget Area 1 will not be "interim" in nature nor is a remedial action planned to follow the removal (except for groundwater). *This comment appears to have been ignored by Solutia. Why?* "

VOLUME 1E:

7. Page 17, Section 4.2: *Original comment*: The last paragraph on this page is unnecessary. While it might be true that pump and treat systems may require long periods of time to reach cleanup goals for groundwater, the fact still remains that using a pump and treat system is generally very effective in terms of preventing the expansion of plumes (i.e., containment). *This comment appears to have been ignored by Solutia. Why?*

will remove (Year)

VOLUME 2A:

8. Page 49, Section 5.5.2: *Original comment*: What is Solutia's suggestion for determining the location and extent of possible buried drums and tanks if the trenching process is terminated when groundwater is reached and no accommodations are to be made to dewater the trenches? *This comment appears to have been ignored by Solutia. Why?*

will address

VOLUME 2C:

9. Page 46, Table 9-1: *Original comment*: Please revise telephone number for U.S. EPA (Michael McAteer) to 312/886-4663. The same comment applies to Volume 3, Appendix C, page 5, Table 2-3. *This comment appears to have been ignored by Solutia. Why?*

will add

DEPARTMENT OF THE ARMY
OMAHA DISTRICT, CORPS OF ENGINEERS
FORT CROOK AREA
P.O. BOX 13287
OFFUTT AFB, NEBRASKA 68113-0287

REPLY TO
ATTENTION OF

July 14, 1999

CENWO-CD-FC (200c)

Mr. Michael McAteer
U.S. Environmental Protection Agency,
Region V
77 West Jackson Blvd
Chicago, IL 60604

Dear Mr. McAteer:

As per your request, we have reviewed and commented on Solutia Inc.'s Plan Documents, dated June 25, 1999. Though no responses have been provided to our May 1999 comments in this plan, we have reviewed the document(s) for incorporation of those comments and have not created new ones. The attached comments lack incorporation in the current plan.

If you have any questions or comments, please call me at (402) 293-2514.

Sincerely,

Timothy R. Gouger, PE
Rapid Response Project Engineer

Attachments

COMMENTS

USACE RAPID RESPONSE COMMENTS
to
SOLUTIA's EE/CA and RI\FS
SUPPORT SAMPLING PLAN and FIELD SAMPLING PLAN
SAUGET AREA 1
VOLUMES 1 & 2
July 13, 1999

While the following information is not critical for plan approval, it is needed to evaluate the defensibility of the characterization work. As such, satisfactorily addressing the following comments prior to field execution or, at least, during the field execution is needed

1. Identify the source of effluent piping information provided in Site History Sections. Maps, figures, drawings showing PRP effluent piping, in conjuntion with analytical data at the outfall(s), is significant documentation for cost recovery purposes. The US EPA has an interest as well.

2. Identify those commercial and industrial facilities pumping groundwater and at what rate on the groundwater maps to evaluate limitations of past groundwater characterizations and current plume geometry.

3. Identify, to extent possible, disposal area(s) within Site I for CS-A dredged waste materials in order to strengthen the defensibility, or lack thereof, of proposed locations for waste characterization borings, sampling and analyses efforts.

4. If possible, identify past and present point source discharges from industry into Dead Creek and take appropriate samples at strategic outfall(s) in order to strengthen forensic efforts and characterization understanding.

5. **Volume I, Page 59, Section 6.2.** Though the text states: "Evaluation of historical information, as described in Section 6.3...," there is no historical information provided in that section. will change citation

6. **Volume I, Page 107, Section 16.** Where are the assumptions for the provided schedule, as we discussed during our June 22, 1999 meeting? The reasonableness of the schedule cannot be evaluated without this information.

7. **Volume II, Page 90, Section 5.14.** It is not clear from the reading which wells or how many wells will be used to perform the rising\falling head (slug) tests. Will the wells be screened at three discrete intervals to perform the test? More detail is needed to evaluate the plan

8. **Volume II, Page 121, Section 5.23.** The plan states: "Stabilization treatability pilot tests will be conducted to evaluate the appropriate mix of stabilizing agents needed to reduce metals and organics leaching." While stabilization of metals is a US EPA approved best demonstrated available technology, stabilization for organics is not. A secondary benefit from stabilization of metals may be reduced leachability for organics. Modify text accordingly. Solutia claims there are tech. to cover VOCs

Information needed for plan approval includes:

Without water quality analyses (sulfate, sulfite, sulfide, nitrate, nitrite, chloride, total organic carbon, ferrous iron, alkalinity, oxygen reduction potential, total phosphorous, potassium, total kjeldahl nitrogen, ammonia, methane, ethane, ethene, etc), natural attenuation cannot be evaluated will do this after we know extent of plume

Section 5.2.3, With regard to the Soil Gas Survey, specify the compound list and detector type. This issue can easily be resolved with a modification\addition to the SOP.

14 July 1999

Mr. Tim Gouger
U.S. Army Corp of Engineers
Third Floor – Building 525
Offutt Airforce Base, Nebraska 68113

Subject: Revised Ecological Risk Assessment - QAPP/ FSP
Revised Sauget Area 1 Support Sampling Plan – QAPP/FSP
Sauget and Cahokia, Illinois

Dear Mr. Gouger:

Roy F. Weston, Inc. (WESTON®) has completed its review of the revised Ecological Risk Assessment and revised Sauget Area 1 Support Sampling Plan QAPP and FSPs for the Sauget and Cahokia, Illinois site. Menzie-Cura & Associates and O'Brien and Gere Engineers, Inc. issued the revised documents, on 25 June 1999. Only initial comments generated by WESTON were used during the re-review. This letter details the comments that still exist after reviewing the revised documents.

Ecological Risk Assessment- QAPP/FSP
Menzie-Cura

They have no problem w/ changing anything in attached comments just need clarif. w/ 2 (next page)

General Comment: This QAPP/FSP should act as a standalone document. Historical information, background information and limited other information can be referenced to other documents. However, personnel, especially field personnel, should not have to flip to several alternate documents to find out pertinent information that is specific to tasks covered within this QAPP/FSP. This QAPP/FSP must contain all required Region V Model QAPP information to be considered approvable.

Title Page: The title page must include all project managers and quality control personnel including these personnel from each of the three laboratories. This is to ensure that all parties have reviewed with the QAPP/FSP and can adhere to the methodologies contained within.

Distribution List: A complete list of QAPP recipients is still missing. At a minimum, this list must include the personnel listed on the title page and the laboratories.

Section 1.1 Site History and Background Information: This section refers to segments or sites A through F and G through N identified on Figure 1-1. Is CS-A through CS-E the same as A through E? It is believed that CS refers to creek sector not sites or segments. The following sites

or segments could not be identified on this figure: A through F, J, and K. The figure must be updated to reflect all referenced sites/segments.

Weston to provide example of appropriate level of detail showing 7 steps for each media

Section 1.6 Data Quality Objectives: This DQO section and the section referenced to in Section 3.0 of the QAPP still does not meet all of the objectives of the May 1996 Model QAPP guidance or the seven-step process outlines in EPA document QA/G-4(September 1994). All seven steps must be individually detailed in this section of the QAPP for the tasks and objectives covered by this QAPP/FSP.

needs clarification

Section 1.7 Project Schedule: This QAPP/FSP should act as a standalone document. A project schedule specific to this QAPP/FSP should be included. A specific reference to another location/document can also be included to indicate how these phases of work correlate to the rest of the project.

Section 2.1 U.S. EPA Remedial Project Manager: The U.S. EPA Remedial Project Manager (RPM) must be identified/named in the text. The RPM must also be identified on a figure in this section of this QAPP (formerly Figure 2.1).

Section 2.2 U.S. EPA Quality Assurance Officer: This term is outdated. It should be changed to U.S. EPA Field Services Section (FSS).

Figure 2-1: The figure formerly identified as Figure 2-1 has been deleted. This QAPP/FSP should for the most part act as a standalone document. An organization chart must be included at least identifying the pertinent personnel identified in section 2 of this QAPP. Extensive laboratory organizational charts could be referenced to another document but key personnel listed in this QAPP must be identified in this QAPP. The project organizational chart for this QAPP should also include pertinent Aquatec Biological Services personnel as these people are not listed in the SSP chart. Finally, lines of communication versus lines of authority must be clearly defined. For example, the project manager has a line of communication with quality control personnel but cannot have authority over that person. Revise and reinsert this figure.

- Table 3-1 SVOCs: It appears that N-nitroso-di-n-propylamine has extended on to two lines. This shifts the MS/MSD precision values one line. The table needs to be realigned to correct this. This also affects the surrogate accuracy, which starts up too high. The field duplicate precision of 50 seems large. The National Functional Guidelines for Organic Data does not support qualification for field duplicates. However, the Inorganic Guidelines use 35. The value of 50 percent should be reevaluated. What is the corrective action if this RPD is not met? Footnote b refers to OLMO3.1. This is an old reference. The most current OLM statement of work is OLMO4.0. The table should be revised based on the latest SOW. However, footnote *b* also suggests that the accuracy and precision limits will be modified to the laboratory limits. One set of numbers or the other must apply, not both. For data validation purposes, the precision and

accuracy cannot have CLP and/or laboratory modified limits both as choices. Also, a superscript *a* is being used but there is no corresponding *a* footnote. Internal standard accuracy must be indicated. Review and revise all tables.

Table 3-7: The corrective action table needs to be further defined. Most of the corrective actions suggest qualifying the data. The qualification criteria and the qualifier must be indicated for each QC parameter. The MS/MSD corrective action suggests qualification if the LCS/SRM results are acceptable. What is the corrective action if the LCS or SRM is not acceptable? Initial and continuing calibration criteria and corrective action should be included in the table.

Section 4.7 Fish Sample Collection: What does retained in a voucher collection as archived specimen mean? What are the procedures for archiving samples? Will they be stored at the laboratory or some alternate location? What sample containers and preservatives will be used?

Tables 4.2 through 4.7: All tables are missing information for cyanide. Fish tables are missing information for percent lipids. Number of samples does not include QC samples. This should be stated on the table or the tables adapted to include this information.

Table 4.2: The footnote to this table states that holding times start from the time that the sample is thawed. Please provide a reference to a guidance document or analytical method that allows this extended holding time. Also, additional reference is necessary for the PCB and dioxin holding times of 1 year.

Table 4.3: What is the concentration or expected quantity of isopropyl alcohol? It is assumed from the table that ice or dry ice is not required for preservation of these samples.

Section 5.0 Sample Custody: Will the same chain of custody form be used for all three laboratories? If different forms will be used, please provide an example of each. Will sample tags be used in conjunction with sample labels? Provide an example chain of custody seal that will be put on the top of the shipping containers (in at least two locations). If custody seals will vary for each laboratory, include an example label for each laboratory.

Section 6.1 Field Instrument/Equipment: The first sentence does not make any sense.

Section 9.3.2 Laboratory Data Reporting: Will the results of tentatively identified compounds (TICs) be provided.

Section 10.3 Laboratory Audits: Did Menzie-Cura and Associates review performance evaluation sample results that Savannah, Triangle and Aquatic Biological Sciences routinely participate in? Do the laboratories participate in and evaluate PE samples for all parameters and applicable methods that will be analyzed for this project? Did Menzie-Cura review internal and external

laboratory audit reports for the three laboratories conducting the work? Did Menzie-Cura conduct an on-site audit?

Section 11.0 Preventative Maintenance: Preventative maintenance must be described for all three laboratories.

Other: It is not a QAPP requirement, yet it is highly suggested that a reference section be added to the end of the document detailing all of the documents referenced throughout the text.

Sauget Area I Support Sampling Plan – QAPP
O'Brien and Gere

Section 1.5.2 Data Quality Objectives and Criteria for Measurement Data: This DQO section and still does not meet all of the objectives of the May 1996 Model QAPP guidance or the seven-step process outlines in EPA document QA/G-4(September 1994). All seven steps must be individually detailed in this section of the QAPP for the tasks and objectives covered by this QAPP/FSP.

Section 2.1 Project Organization: Figure 1 needs to be revised to show lines of authority versus lines of communication. Project managers and other personnel cannot have authority over quality control/quality assurance personnel. QA/QC personnel must act independently. Also, the U.S. EPARPM should only be listed in the chart once, at the top. How does Menzie-Cura and the ecological sampling fit into the overall organizational setup.

Section 4 Sample Procedures: The nomenclature for the background sample remains confusing. The background soil sample is labeled BS-EE20-__FT. EE20 is identified as a well location number. Does this identify a background soil sample collected from a monitoring well that will be installed during this investigation?

Figure 4: This figure is labeled example sample label and tag. Are these items identical as only one item is shown on this page? How will sample tags be attached to the containers?

Figure 5: This figure shows an example of a custody seal for Savannah Labs. What about custody seals for dioxin/furan samples going to Triangle Labs?

Tables 5A through 5P Detection Limits: It is still unclear if PQLs are the same for the TCLP parameters as compared to the original analysis (i.e., TCLP VOCs versus VOCs). Please clarify on the tables and provide additional tables, if necessary.

Table 5D: Are the PQLs and MDLs based on SW846 Method 8260B using the 5021 or 5035 prep method? From the low levels indicated, it appears that the low level 5021 (sodium

bisulfate) method was used. Please clarify and ensure that these detection limits will be met with the methods suggested.

Sauget Area I Support Sampling Plan – FSP
O'Brien and Gere

Section 5.3.3 Field Procedures, number 6: The text for VOC sample collection needs to be revised to include procedures for collection using Encore samplers.

Section 5.7.1 or 5.7.3: Existing wells may require redevelopment prior to purging and sample collection. Redevelopment procedures need to be provided in section 5.7.1 or 5.7.3.

Section 5.16.3 Upgradient groundwater sampling Field Procedures: This section refers back to 5.7.3 for redevelopment procedures. Redevelopment procedures are not detailed in section 5.7.3 but need to be included. Currently section 5.7.3 only discussed purging and sampling. Redevelopment typically involves a surge block and criteria should be stated for sediment buildup that actually makes redevelopment necessary.

- Section 5.20 Sediment Sampling: The depth of the sediment sample must be included in the text. For example: will the sediment sample be collected from 0 to 6 inches bgs or 0 to 12 inches bgs? Please clarify.

If you have any questions or require additional information, please contact the undersigned at (847) 918-4000.

Very truly yours,

ROY F. WESTON, INC.

Tonya Balla
Project Engineer

TB/sr

cc: Gerald Almquist – WESTON

WESTON'S RISK ASSESSOR'S COMMENTS TO SOLUTIA'S EE/CA AND RI/FS SUPPORT SAMPLING PLAN, ECOLOGICAL WORK PLAN, FIELD SAMPLING PLAN, AND QAPP
SAUGET AREA 1
VOLUMES 1-3
June 25, 1999

Comments were not addressed or not adequately addressed from the previous comments submittal are as follows:

Support Sampling Plan

1. **General.** Fluorides and phosphates have been identified as chemicals associated with past activities at the site. Since fluorides are highly toxic in the aquatic environment, and phosphates are contributors to nutrient loading and have been found in site sediments in percentage concentrations during previous sampling activities, fluorides, total phosphates, and ortho-phosphates should be analyzed in surface water and sediments.

   on p. 86 already

2. **Sections 8.1, 8.2, and 8.3.** Dioxins/furans are missing from the analyte list for sediment coring in the Undeveloped, Developed, and Borrow Pit Lake areas of Dead Creek. Please explain.

   will leave as is

3. **Section 8.4, "Extent of Site-Specific Constituent Migration in Dead Creek".** Additional samples for characterization should be collected within the creek for analysis if the samples collected every 1000 ft analyzed for TCL/TAL reveal relatively high concentrations of a chemical currently not considered "industry-related." Contingency procedures for this instance should be presented.

   It is understood that EPA will ask for more later

4. **Page 87, Section 10.0 "Air Sampling Plan".** As commented previously, air sampling cannot be used to validate and adjust predictive models since the measured air concentrations are being collected as PM 2.5 and the modeled calculations that are proposed are based on PM 10.

   will address

5. **Page 89, Section 11.0 "Ecological Sampling Plan", Paragraph 2.** It is unacceptable to exclude VOC analyses in the sediment collected for use in the ecological assessment because the samples proposed for analysis in Section 8 are analyzed for VOCs. Section 8 samples are vertically integrated and most likely will not provide clear information about the biologically active layer of the sediment. It is suggested that at least a subset of the ecological sediment samples is analyzed for VOCs.

   will co-locate VOCs w/

6. **11.4 "Evaluation of Toxicity in Creek Segment F".** Given the size of the Borrow Pit Lake, the number of biota samples should be increased to ten sampling locations. up from 3

   no change will leave as is

Human Health Risk Assessment Work Plan

7. **Figure 2-1.** Soil exposure pathways should be added for the "recreational teenager".

   no change - leave as is mention this in risk assmt.

Ecological Risk Assessment Work Plan

8. **General.** A terrestrial component should be considered for evaluation in the ecological risk assessment. As indicated in previous comments, just because the land bordering Dead Creek and the wetland environments is developed for residential and/or commercial use, a terrestrial ecological risk assessment is not precluded. These types of land uses can support vegetation and invertebrates, and most likely small mammals and birds. If analytical results yield detected concentrations of contaminants in the soil, in particular if they are bioaccumulative contaminants, the terrestrial component should be examined. In addition, exposure to soil in these areas is being considered for the human health risk assessment and therefore it is assumed that groundwater contamination may be transported to the soils over the stream bank.

   No need to take samples now but can model for it later PRPs want to sample for critters (I said we would unlikely do this).

9. **Page 23, paragraph 4.** This sentence is incorrect. The SSP and FSP indicate that the seeds, stems, and leaves of aquatic plants will be composited. will fix

10. **Page 25. Definition of $Conc_{food}$.** The appropriate use of the mean concentration is contingent upon the concentration variability among samples. Upon collection of data and review of the results, consideration to an alternative may be warranted, until that time, as noted in previous comments, the exposure point concentration should be the lower of either the upper 95% confidence limit (which is a type of mean concentration) or the maximum detected concentration (U.S. EPA, 1992 *Calculation the Concentration Term*), not the average, which I am assuming in the context is meant as the arithmetic mean. will clarify this

Ecological Field Sampling Plan

11. **Section 4, Page 8 of 20, 2nd paragraph.** The reader is assuming that bivalve tissue samples, if available, will not be composited with the insect larvae for macrobenthic tissue samples. will clarify

Ecological Sampling - General

Basis of Ecological Samples in Sectors B through F

12. Basing ecological (i.e., sediment and biota) samples spatially, that is the relative up-stream, mid-stream, and down-stream within each sector, is unacceptable. The original comment, to which I am supposing this change is in response to is as follows:

> "Page 87, Section 11.2 "Evaluation of Toxicity in Creek Segments B, C, D, and E." It is not acceptable to base the sampling locations for the ecological risk assessment support sampling on the results of the sediment sampling for migrations of industry-specific chemicals (Section s8.1 through 8.3) if dioxins are not included in the sediment analyte list, particularly since the Preliminary Ecological Risk Assessment for Creek Segment F (the segment farthest away form the source areas) indicates detrimental effects to wildlife from dioxins. In addition, what industry-specific chemical is going to be used to determine where the biota samples will be collected; and parallel to the question in comment #1, what will be done if chemicals from different chemical classes are radically different in concentration (e.g., highest detected versus lowest detected at a sampling location?"

It appears that this new sampling scheme is an end-around to adding dioxins to the industry-specific chemicals and/or giving clarification to the selection of samples based on concentration gradients. There are no grounds for selecting the ecological samples on a spatial basis. They should be selected on a concentration basis as previously discussed, and since dioxins are a potential ecological threat according to the screening evaluation in Sector F, the samples considered in selecting the concentration gradients should have dioxin data for consideration. As asked for previously, a clarification as to what method will be used to determine the relative contamination of the samples is also needed. will focus on metals on a concentration basis esp. for copper

In addition, the Field Sampling Plan (Volume 2) Page 127, Section 5.20.5 "Ecological Sediment Sampling" is inconsistent with the SSP and the Ecological FSP. Please ensure that once the ecological sampling is corrected that all of the texts are in agreement.

Number of Forage Fish, Crayfish, and Benthic Invertebrate Samples in Sectors B through F

13. The collection of one sample/creek sector of forage fish, crayfish, and benthic invertebrates for chemical analysis is insufficient for characterization and subsequent ecological assessment receptor modeling. At least three biota samples from each sector should be collected based on a concentration will focus on creek as a whole

gradient. For clarity, composite samples for the benthic invertebrates should be collected within a concentration gradient if possible. If it is necessary to take grab samples from differing concentration areas, the samples composited should be collected within approximately a quarter mile of each other.